AMENDMENTS TO THE CLAIMS:

Please amend the claims as indicated in the listing of the claims below. The following listing of claims replaces any previous listing of the claims:

1-38. (Canceled)

39. (Currently amended) A method, comprising:

grouping cable modems into a plurality of groups of cable modems, where the cable modems are grouped into the plurality of groups based on a latency associated with each of the plurality of groups; [[and]]

assigning a different virtual upstream channel to each of the plurality of groups, where each virtual upstream channel is associated with a different mini-slot size and a different modulation and [[,]] symbol rate [[,]] ~~or preamble~~;

receiving bandwidth requests from multiple ones of the cable modems;

for each of the bandwidth requests, determining a mini-slot size based on the modulation and symbol rate of the virtual upstream channel to which a respective cable modem is assigned; and

scheduling transmission on a physical channel from cable modems associated with each of the bandwidth requests based on a respective mini-slot size.

40. (Canceled)

41. (Previously presented) The method of claim 39, further comprising:

differentiating slower cable modems from faster cable modems; and

assigning bandwidth to the cable modems based on the differentiation to allow the slower cable modems to transmit data proportionately more frequently than the faster cable

modems.

42. (Previously presented) The method of claim 39, further comprising:

sending a message, that allocates upstream bandwidth, on each of the different virtual upstream channels.

43. (Previously presented) The method of claim 42, where each message pertains to cable modems of a group of the plurality of groups assigned to a respective virtual upstream channel.

44. (Currently amended) The method of claim 39, where each virtual upstream channel is associated with a different preamble ~~mini-slot size~~.

45. (Canceled)

46. (Currently amended) A cable modem termination system (CMTS), comprising:

means for grouping cable modems into a plurality of groups of cable modems, where the cable modems are grouped into the plurality of groups based on a latency associated with each of the plurality of groups; and

means for assigning a different virtual upstream channel to each of the plurality of groups, where each virtual upstream channel is associated with a different mini-slot size and a different modulation [[,]] and symbol rate ~~or preamble~~; and

means for receiving bandwidth requests from multiple ones of the cable modems;

means for determining, for each of the bandwidth requests, a mini-slot size based on the modulation and symbol rate of the virtual upstream channel to which a respective cable

modem is assigned; and

means for scheduling transmission on a physical channel from cable modems associated with each of the bandwidth requests based on a respective mini-slot size.

47. (Canceled)

48. (Previously presented) The system of claim 46, further comprising:

means for differentiating slower cable modems from faster cable modems; and

means for assigning bandwidth to the cable modems based on the differentiation to allow the slower cable modems to transmit data proportionately more frequently than the faster cable modems.

49. (Previously presented) The system of claim 46, further comprising:

means for sending a message, that allocates upstream bandwidth, on each of the different virtual upstream channels.

50. (Previously presented) The system of claim 49, where each message pertains to cable modems of a group of the plurality of groups assigned to a respective virtual upstream channel.

51. (Currently amended) The system of claim 46, where each virtual upstream channel is associated with a different preamble ~~mini-slot size~~.

52. (Canceled)

53. (Currently amended) A method, comprising:

grouping cable modems into different groups of cable modems based on latencies

associated with the cable modems; and

allocating bandwidth request opportunities to each of the different groups of cable modems based on the different latencies associated with each of the groups;

assigning a different virtual upstream channel to each of the different groups, where each virtual upstream channel is associated with at least one of a different modulation, symbol rate or preamble;

receiving bandwidth requests from multiples ones of the cable modems;

for each of the bandwidth requests, determining a mini-slot size based on a modulation and symbol rate associated with a respective bandwidth request; and

scheduling transmission on a physical upstream channel from cable modems associated with each of the bandwidth requests based on a respective mini-slot size.

54. (Canceled)

55. (Currently amended) The method of claim [[54]] 53, further comprising:

sending a message that allocates upstream bandwidth on each of the different virtual upstream channels, where each message pertains to cable modems of the different groups assigned to a respective virtual upstream channel.

56 and 57. (Canceled)